REMARKS

Claims 1 and 12-19 are pending. Claims 12-17 have been indicated as allowed. Final Action at page 1. Claims 1 and 18 have been amended. New dependent claims 20-25 have been added. *See,* M.P.E.P. § 821.04. Support for the new and amended claims can be found throughout the specification and in the claims as originally filed, for example, on page 36, lines 8-9, page 40, lines 12-14, and page 44, lines 8-15. No new matter enters by way of these amendments.

I. Rejection under 35 U.S.C. § 112, first paragraph, New Matter and Written Description

Claims 1 and 18-19 stand rejected under 35 U.S.C. § 112, first paragraph because the claimed subject matter allegedly was "not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." Final Action at page 2. Applicants respectfully traverse this rejection.

The Examiner asserts that "[t]he original claims were directed to sequences encoding an adenine phosphoribosyl transferase from maize or soybean and comprised SEQ ID NO: 5." *Id.* The Examiner argues however, that "[a]s amended, the claims embrace an adenine phosphoribosyl transferase from any species." *Id* at pages 2-3. The Examiner alleges that this "concept is not disclosed on any of [the] pages pointed to by [the] applicant as basis for the claim amendments." *Id.* at page 3. Although Applicants respectfully disagree, to facilitate prosecution, claims 1 and 18 have been amended to recite a substantially purified nucleic acid molecule that encodes a maize adenine

phosphoribosyl transferase. As such, Applicants request reconsideration and withdrawal of the new matter rejection of claims 1 and 18-19.

In addition, the Examiner argues that "[t]he specification does not adequately describe the claimed nucleic acid molecules encoding the complete protein for maize or any other sequence." Final Action at page 4. Applicants respectfully disagree.

As previously stated, an adequate written description of a genus of nucleic acids, as recited in claims 1 and 18-19 may be achieved by either "a recitation of a representative number of [nucleic acid molecules], defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus." *Regents of the University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568-69 (Fed. Cir. 1997). The feature relied upon to describe the claimed genus must be capable of distinguishing members of the claimed genus from non-members. *Id.*

The purpose of the written description requirement is to ensure that the inventors had possession of the claimed subject matter, *i.e.*, to ensure that the inventors actually invented what is claimed. *Gentry Gallery Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997); *In re Alton*, 76 F.3d 1168, 1172, 37 U.S.P.Q.2d 1578, 1581 (Fed. Cir. 1996). In accordance with this purpose, Applicants need not "describe," in the sense of Section 112, all things that are encompassed by the claims. To contend otherwise would contradict established jurisprudence, which teaches that a patent may be infringed by technology developed after a patent issues. *United*

States Steel Corp. v. Phillips Petroleum Co., 865 F.2d 1247, 1251, 9 U.S.P.Q.2d 1461, 1464 (Fed. Cir. 1989). A related, and equally well-established principle of patent law is that claims "may be broader than the specific embodiment disclosed in a specification." *Ralston Purina Co. v. Far-mor-Co*, 772 F.2d 1570, 1575, 227 U.S.P.Q. 177, 179 (Fed. Cir. 1985), *quoting In re Rasmussen*, 650 F.2d 1212, 1215, 211 U.S.P.Q. 323, 326 (C.C.P.A. 1981). Thus, in order for Applicants to describe each and every molecule encompassed by the claims, it is not required that every aspect of those nucleic acid molecules (*e.g.*, a sequence that encodes the entire enzyme) be disclosed. *In re Alton,* 76 F.3d 1168, 1175 (Fed. Cir. 1996) (if a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing even if every nuance of the claims is not explicitly described in the specification).

It is well-settled law that each nucleic acid molecule within a claimed genus does not need to be described by its complete structure. The Federal Circuit has elucidated a test for written description wherein a genus of nucleic acids may be described by a structural feature that distinguishes members of the claimed genus from non-members of the claimed genus. *Regents of the University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568-69, 43 U.S.P.Q.2d 1398, 1406 (Fed. Cir. 1997). In contrast to the mere name "cDNA" provided in *Eli Lilly*, Applicants have provided a detailed chemical structure by way of the claimed SEQ ID NO: 5. Applicants have therefore satisfied the *Eli Lilly* test for written description.

The Examiner alleges that "one of ordinary skill in the art [would not] know what portions of the sequence provide the structure that would make the structure identifiable

as being from maize or soybean rather than another plant." Final Action at page 4. Applicants have provided a detailed chemical structure, *i.e.*, the nucleic acid sequence of SEQ ID NO: 5. Nucleic acid molecules falling within the scope of claims 1 or 18-19 are readily identifiable – they comprise the nucleic acid molecule having or specifically hybridizing to the nucleic acid sequence of SEQ ID NO: 5 or complement thereof. *See, e.g.*, specification at page 40, lines 12-14. The fact that the nucleic acid molecules may comprise additional sequences or variations is beside the point. Such modifications are readily envisioned by one of ordinary skill in the art and disclosed through the present specification. Indeed, the Examiner has also acknowledged that the specification also describes purified nucleic acid molecules having between 90% and 100% sequence identity with a nucleic acid molecule having the full-length sequence of SEQ ID NO: 5 or complement thereof. *See,* allowed claim 14. Thus, there is no deficiency in the written description support for the claimed invention of claims 1 and 18-19.

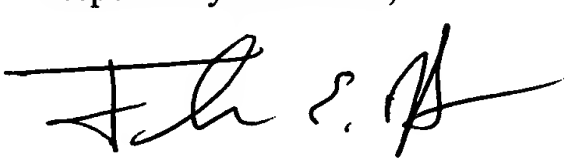
The Examiner argues that a frame shift in SEQ ID NO: 5 "makes it entirely unclear what the C-terminus of the protein would look like (and thus the nucleic acid that would encode it)." Final Action at page 4. Applicants maintain that based on the disclosure of the present specification and sequence listing, the skilled artisan would recognize that Applicants were in possession of the claimed invention, despite any frame shift that may be present in the sequence.

Therefore, claims 1 and 18-19 satisfy the written description requirement of 35 U.S.C. § 112, first paragraph. Reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that the present application is now in condition for allowance, and notice of such is respectfully requested. The Examiner is encouraged to contact the undersigned should any additional information be necessary for allowance.

Respectfully submitted,



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